IMPROVED GROWTH, FEED UTILIZATION AND DISEASE RESISTANCE OF NILE TILAPIA (*Oreochromis niloticus* LINNAEUS, 1758) FED WITH POTENTIAL PROBIOTIC *BACILLUS* SPP. ISOLATED FROM AFRICAN NIGHTCRAWLER, *Eudrilus eugeniae* (KINBERG, 1867)

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ABSTRACT

The study evaluated the effect of potential probiotic *Bacillus* spp. previously isolated from African nightcrawler (*Eudrilus eugeniae*) on the growth, feed utilization, and disease resistance of Nile tilapia (*Oreochromis niloticus*). The experiment is composed of six treatments: commercially available feed served as the control; four treatments were individually supplemented with single *Bacillus* sp. (ANSCI9, BFAR9, RM3, and RM10); and one treatment is supplemented with the mixture of four *Bacillus* spp. Experimental fish were fed with their respective diets for four weeks. Significantly higher ($P < 0.05$) final average body weight (ABW) were observed from treatments ANSCI9, BFAR9, RM3 and RM10 compared to the control. Treatments BFAR9 and RM10 also showed significantly higher ($P < 0.05$) absolute growth (AG) compared to the control. On the other hand, only treatment RM10 showed significantly higher ($P < 0.05$) specific growth rate (SGR) and relative growth rate (RGR) than the control. Also, treatment RM10 had significantly lower ($P < 0.05$) feed conversion ratio (FCR) than the control. After the feeding experiment, fish were challenged with *Aeromonas hydrophila*. The mortality was recorded and observed for two weeks. The result showed that all treated diets have significantly higher ($P < 0.05$) survival rates than the control. The relative level of protection (RLP) was also computed and treatments ANSCI9, BFAR9, RM3, RM10, and the combination had 61.11%, 55.56%, 50.00%, 66.67%, and 44.44%, respectively. The results show that the potential probiotic *Bacillus* spp. isolated from African nightcrawler (*E. eugeniae*) improved the growth, feed utilization, and disease resistance of Nile tilapia (*O. niloticus*).